

A NEW SPECIES OF ARBORESCENT PASSIFLORA (ASTROPHEA) FROM
COSTA RICA

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Within the genus Passiflora, the species in subgenus Astrophea are trees or large shrubs and are particularly abundant in South America. A new species is here described from Costa Rica as:

Passiflora tica Gómez-L. & Gómez P.

P. arboreae affinis, a qua imprimis differt suavis odoris, coronis 2-seriatis, foliis strigosis, filamentibus et estylibus persistentibus.

Arbor ad 7 m alta vel frutex procerus. Folia petiolata, petiulus 3-4.5 cm longus, obscure striato-canaliculatus; lamina amplissime elliptico-oblonga vel e.-obovata, penninervia, integerrima, 12.5-(22.42)-39 cm longa, 6.5-(13.05)-23 cm lata, apicem acuminata breviter mucronata, ad basim obtuso-rotundata, supra glabra, subtus strigosa, aromatica; calycis tubus cylindricus, sepalis petalisque oblongo-subpanduratis, corona 2-seriata, filamentis extimis 7 mm longis, dolabriformibus, alteris brevioribus (3-4 mm longis), tereto-digitiformibus; operculum tubulosum, non exsertum, erosum, limene membranosum, cupulatum; ovarium obscure trigonum, dense tomentosum.

Holotypus: Márgenes del río San Lorenzo, San Ramón, Alajuela, apx. 1200 m.s.m., J. Gómez-L. 6627 (CR). Isotypi: same locality, Gómez-L. 5019 (USJ, MO, F). Paratypi: Chitaría de Turrialba, Cartago, 600 m.s.m., L. Poveda 967 (USJ, CR); same locality, L. D. Gómez 6074 (US).

Tree or large shrub. Branches terete, without tendrils. Leaves elliptic-oblong to e.-obovate, entire, 12.5-39 cm long, 6.5-23 cm wide, apex acuminate and shortly mucronate, rounded obtuse at base, aromatic when crushed (scent like that of Pimpinella), glabrous above, strigose beneath; calyx cylindrical, corona 2-seriate, the outer ones 7 mm long, dolabriform, the inner ones much reduced (3-4 mm), fleshy, terete, digitiform; operculum tubulose, not exserted, limen membranose, cupuliform, ovary subtrigonus, densely tomentose.

Closely related to P. arborea Spreng., from which it differs in having a 2-seriate corona and the much larger, strigose leaves. In Costa Rica the closest congener is P. pittieri Masters which is set apart from P. tica by the presence of tendrils, the 5-seriate corona and the much smaller and non-aromatic leaves.

It is suspected that P. tica be the larval food plant of the South American butterfly Heliconius eluchia, found in Costa Rica within the geographical range of the new species of passionflower. This butterfly, closely related to H. sapho and H. hewitsoni which feed on Passiflora pittieri in Costa Rica, belongs to a group of Heliconiinae specializing in feeding on Passiflora subg. Astrophea.

NOTES ON NEW AND NOTEWORTHY PLANTS. CXLVIII

Harold N. Moldenke

VERBENA CATAMARCENSIS Mold., sp. nov.

Herba perennis, ramis ramulisque minute puberulis tetragonis griseis; foliis oppositis laminis profunde pinnato-partitis, partis subuniforme 2 mm. latis supra atroviridibus minutissime puberulis glabrescentibus, subtus densissime puberulis (costa excepta), costa uniforme 2 mm alata, petiolo ca. 2 cm. longo alato in costam confluyente; inflorescentiis terminalibus; pedunculis filiformibus 1--3 cm. longis minutissime puberulis glabrescentibus; calycibus tubulosis ca. 5 mm. longis dense breviterque pubescentibus, pilis erectis; corollis lilacinis.

A perennial herb, the stems and branches slender, gray, tetragonal, minutely puberulent; branchlets and twigs more slender, more acutely tetragonal, stramineous; leaves abundant, decussate-opposite, often with a pair of much smaller ones on much abbreviated twiglets in their axils, to 8 cm. long and 6 cm. wide (in outline), very deeply and uniformly pinnately parted to about 1 mm. from the midrib, the divisions uniformly about 2 mm. wide, apically acute, dark-green, shiny, and very minutely puberulent (soon glabrescent) above, permanently very densely puberulent (except for the midrib) beneath with slightly cinereous hairs; midrib and secondaries decidedly prominulous and conspicuous beneath and plainly green and only very slightly and inconspicuously puberulous or soon glabrescent; petioles about 2 cm. long but not distinguishable from the alate leaf-midrib which is decurrent into it; inflorescence terminal and in the uppermost pair of leaf-axils, 2--6 cm. long, many-flowered; peduncles filiform, 1--3 cm. long, very minutely puberulent or soon glabrescent; bracts lanceolate, very small, about 2 mm. long, apically attenuate-acute; calyx tubular, about 5 mm. long, densely short-pubescent with erect brownish hairs; corolla lilac.

The type of this distinctive species was collected by A. L. Cabrera (no. 14149) at Quebrada de la Cebila, Catamarca, Argentina, on March 12, 1961, and is deposited in the United States National Herbarium in Washington.

ADDITIONAL NOTES ON THE GENUS *PRIVA*. IX

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PRIVA Adans.

Additional & emended bibliography: Sandmark in L., *Amoen. Acad.* 5: 375. 1759; Aubl., *Hist. Pl. Guian. Fr.* 1: 16. 1775; J. F. Gmel in L., *Syst. Nat.*, ed. 13, imp. 1, 2: 41. 179; Poir. in Lam.,

Encycl. Méth. Bot. [Illustr. Gen.] 1: 58--60. 1791; Roxb., Hort. Beng., imp. 1, 46. 1814; Spreng., Anleit. 2 (1): 422. 1817; Steud., Nom. Bot. Phan., ed. 1, 111, 396, 657, 873, & 874. 1821; Link, Enum. 2: 223. 1822; Kunth, Syn. 2: 61. 1823; Poir., Dict. 43: 338. 1826; Loud., Hort. Brit., ed. 1, 246 & 529. 1830; Schlecht. & Cham., Linnaea 5: 98--99. 1830; Sweet, Hort. Brit., ed. 2, 418. 1830; Endl., Gen. 634. 1831; Spreng. in L., Gen. Pl., ed. 9, 2: 477. 1831; Loud., Hort. Brit., ed. 2, 246 & 529. 1832; Roxb., Fl. Ind., ed. 2, imp. 1, 3: 90--91. 1832; Piddington, Tab. View. Gen. Char. Roxb. 106--107. 1836; Spreng. in L., Gen. Pl., ed. 9, 2: 477. 1831; Endl., Gen. Pl. 1: 634. 1838; G. Don in Loud., Hort. Brit., ed. 3, 246 & 529. 1839; G. Don in Sweet, Hort. Brit., ed. 3, 552. 1839; Bartl., Ord. 180. 1840; Endl., Enchirid. Bot. 312. 1841; Reichenb., Nom. 108. 1841; Steud., Nom. Bot. Phan., ed. 2, 2: 397 & 750. 1841; Brongn., Enum. Gen. 65. 1843; D. Dietr., Syn. Pl. 3: 371 & 606. 1843; Lindl., Veg. Kingd. 664. 1847; Gay, Hist. Fis. Chile Bot. 5: [6] & 7, pl. 55. 1849; A. L. Juss. in Orbigny, Dict. Univ. Hist. Nat. 10: 473 (1849) and 13: 184. 1849; C. Muell. in Walp., Ann. Bot. Syst. 5: 705--706. 1860; Ulrich, Internat. Wörterb., ed. 1, 185. 1871; Griseb., Pl. Lorentz. 192. 1874; Pfeiffer, Nom. Bot. 2 (1): 132 (1874) and 2 (2): 839--840 & 1568--1570. 1874; Roxb., Fl. Ind., ed. 2, imp. 2, 488. 1874; Ulrich, Internat. Wörterb., ed. 2, 185. 1875; Benth. in Benth. & Hook. f., Gen. Pl. 2 (2): 1137, 1145, & 1147. 1876; Griseb., Abhandl. K. Gesell. Wiss. Göttingen 24: [Symb. Fl. Argent.] 275. 1879; F. Phil., Car. Pl. Vasc. Chil. 219. 1881 Balf. f., Trans. Roy. Soc. Edinb. 31: [Bot. Socotra] 232--233 & 433. 1888; Hillebrand, Fl. Haw. Isls., imp. 1, 341. 1888; Stahl, Estud. Fl. Puerto Rico, ed. 1, 3: 286--288 & 363. 1888; Baill., Hist. Pl. 11: 81, 94, 103--104, & 112. 1891; Briq. in Engl. & Prantl, Nat. Pflanzenfam., imp. 1, 4 (3a: 144, 153, & 155, fig. 59 E (1895) and ed. 1, 4 (3a): 383. 1897; J. C. Willis, Dict. Flow. Pl., ed. 2, 530 & 604. 1903; Dalla Torre & Harms, Gen. Siphonog., imp. 1, 431. 1904; Post & Kuntze, Lexicon 70, 460, & 688. 1904; Vierh., K. Akad. Wiss. Wien Denkschr. 71: 114--115 [434--435]. 1907; J. C. Willis, Dict. Flow. Pl., ed. 3, 546 & 621. 1908; Reiche & Phil., Estud. Crit. Fl. Chile 5: 272 & 304--305. 1910; Urb., Symb. Antil. 4: 534. 1911; Urb., Symb. Antill. 7: 354. 1912; Wangerin, Justs Bot. Jahresber. 39 (1): 436. 1912; Thonner, Flow. Pl. Afr. 469. 1915; Sanzin, Anal. Soc. Cient. Argent. 88: 96, 97, 99, 106, & 134. 1919; J. C. Willis, Dict. Flow. Pl., ed. 5, 539, 677, & 678. 1925; Chiouv., Fl. Somala [1]: 57 & 274. 1929; Stapf, Ind. Lond. 6: 567. 1933; Stahl, Estud. Fl. Puerto Rico, ed. 2, 3: 286--288 & 363. 1937; Marloth, Fl. S. Afr. 3: 145 & 146. 1932; Fedde & Schust., Justs Bot. Jahresber. 57 (2): 401. 1938; Batalla, An. Inst. Biol. Univ. Nac. Mex. 11: 129--161. 1940; H. N. & A. L. Mold., Pl. Life 2: 16, 21--24, 31, 33, 55, 59, 67, 72, & 73. 1948; Metcalfe & Chalk, Anat. Dicot. 2: 1031--1033, 1035, & 1040. 1950; J. C. Willis, Dict. Flow. Pl., ed. 6, 539, 677, & 678. 1951; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 280 & 302, fig. 130 A. 1957; Dalla Torre & Harms, Gen. Siphonog., imp. 2, 431 (1958) and imp. 3, 431. 1963; Rouleau, Guide Ind. Kew. 154 & 353. 1970; Mukhopadhyay, Pollen Morph. Verb. [thesis]. 1971; Roxb., Fl.

Ind., ed. 2, imp. 3, 488. 1971; C. D. Adams, Flow. Pl. Jamaica 626 & 632. 1972; D. Powell, Bu II. Inst. Jam. Sci. 15 (2): 424. 1973; Thanikaimoni, Inst. Franc. Pond. Trav. Sect. Scient. Techn. 12 (2): 102 (1973) and 13: 192 & 328. 1976; Fournet, Fl. Illust. Phan. Guad. Mart. 1391 & 1399--1400, fig. 665. 1978; Mukherjee & Chanda, Trans. Bose Res. Inst. 41: 44, 47, 48, 53, & 56. 1978; Holm, Pancho, Herberger, & Plucknett, Geogr. Atlas World Weeds 296. 1979; Lopez-Palacios, Revist. Fac. Farm. Univ. Andes 20: 30. 1979; Milz & Rimpler, Zeitschr. Naturforsch. Wiesb. 34C: 324 & 325. 1979; Mold., Phytologia 43: 420--426, 500, 501, 504, & 509--512 (1979), 44: 92--110, 140, & 510 (1979), 45: 40 & 509 (1980) and 46: 404 & 510. 1980; Mold., Phytol. Mem. 2: 5, 23, 50, 54, 66, 70, 73, 74, 76--79, 82, 84--87, 90, 92--94, 96, 98, 99, 101, 102, 104, 105, 111, 118, 123, 125, 126, 129, 131, 135, 161, 175, 178, 190, 199, 201--204, 211, 224, 227, 228, 231, 234, 236, 238, 239, 241--244, 246, 251, 253, 256, 257, 265, 269, 271, 273, 275, 317, 359, 375, 376, 411, 434, 435, 437, 442, 444, 448, 449, 451, 462, 463, & 572--573. 1980; Mold. & Bromley in Harley & Mayo, Toward Checklist Fl. Bahia 192. 1980; Rogerson, Becker, Long, Prince, & Zanoni, Bull. Torrey Bot. Club 107: 99 & 265. 1980; Roxb., Hort. Beng., imp. 2, 46. 1980; Seymour, Phytol. Mem. 1: 245. 1980; Wiggins, Fl. Baja Calif. 530, [532], & 533, fig. 501. 1980; Hillebrand, Fl. Haw. Isls., imp. 2 [Cramer, Repr. U. S. Floras 9:] 341. 1981; Mold., Phytologia 47: 411, 413, 414, 461, & 510 (1981) and 48: 451 & 510. 1981.

Post & Kuntze (1904) divide the genus into the following Sections: (1) *Eublairia* Kuntze [*Blairia* Adanson, 1763, *Patya* Neck., 1790, *Aparinaria* Schau., 1847], (2) *Bursera* Kuntze [Loefl., 1758, *Priva* Adans., 1763, *Eupriva* Schau., 1847] and (3) *Castelia* Benth. & Hook. f. (Cav.). Loefling, however, proposed a "*Burseria*", not "*Bursera*".

Excluded species:

Priva betulaesfolia H.B.K. ex López-Palacios, Revist. Fac. Farm. Univ. Andes 20: 2; sphalm. 1979 = *Phyla betulaefolia* (H.B.K.) Greene.

PRIVA ADHAERENS (Forsk.) Chiov.

Additional synonymy: *Priva leptostachya* Kobuski ex Chiov., Fl. Somal. 1: 274, in syn. 1929 [not *P. leptostachya* A. L. Juss., 1806, nor L., 1940, nor H. H. W. Pearson, 1966].

Additional & emended bibliography: D. Dietr., Syn. Pl. 3: 606. 1843; C. Muell. in Walp., Ann. Bot. Syst. 5: 706. 1860; Balf. f., Trans. Roy. Soc. Edinb. 31: [Bot. Socotra] 332--333 & 433. 1888; Vierh., K. Akad. Wiss. Wien Denkschr. 71: 114 [434]. 1907; Chiov., Fl. Somal. [1]: 57 & 274. 1929; H. N. & A. L. Mold., Pl. Life 2: 59. 1948; Mold., Phytologia 43: 330--331, 425, & 426. 1979; Mold., Phytol. Mem. 2: 201--204, 227, 231, 234, 246, 253, 434, 435, 449, & 572. 1980; Mold., Phytologia 47: 413. 1981.

PRIVA AFRICANA Mold.

Additional bibliography: Mold., Phytologia 43: 332. 1979; Mold., Phytol. Mem. 2: 241, 246, & 572. 1980.

PRIVA ANGOLENSIS Mold.

Additional bibliography: Mold., *Phytologia* 43: 332. 1979; Mold., *Phytol. Mem.* 2: 234 & 572. 1980.

PRIVA ARMATA S. Wats.

Additional bibliography: Mold., *Phytologia* 43: 420. 1979; Mold., *Phytol. Mem.* 2: 66 & 572. 1980.

PRIVA ASPERA H.B.K.

Emended synonymy: *Priva aspera* Jumb. & Bonpl. apud Steud., *Nom. Bot. Phan.*, ed. 1, 657. 1821.

Additional & emended bibliography: Steud., *Nom. Bot. Phan.*, ed. 1, 657 (1821) and ed. 2, 2: 397. 1841; D. Dietr., *Syn. Pl.* 3: 606. 1843; Hillebrand, *Fl. Haw. Isls.*, imp. 1, 341. 1888; B. L. Robinson, *Proc. Amer. Acad. Sci.* 5: 531. 1916; Mold., *Phytologia* 43: 420 (1979) and 44: 102. 1979; Mold., *Phytol. Mem.* 2: 66, 73, 76, 78, 79, 82, 359, 434, & 572. 1980; Seymour, *Phytol. Mem.* 1: 245. 1980; Hillebrand, *Fl. Haw. Isls.*, imp. 2 [Cramer, *Repr. U. S. Floras* 9:] 341. 1981.

Dr. Sousa, in a personal communication to me, records this species from Quintana Roo, Mexico. Recent collectors describe it as an erect herb, 1 m. tall, the inflorescence-axes dull-purple, and the fruit turning black and fleshy. The corollas are said to have been "lilac-pink" on *Brenan 14465*.

Material of this species has been misidentified and distributed in some herbaria as "*Labiatae*". On the other hand, the *Cochrane, Kolerman, & Cochrane 8651*, distributed as *P. aspera*, actually is *P. lappulacea* (L.) Pers., while *Arguelles 1299* is *P. mexicana* (L.) Pers. The "*Priva aspera*" listed by Hillebrand (1888, 1981) is actually *Salvia occidentalis* Sw. in the *Lamiaceae*!

Additional citations: MEXICO: Chiapas: *Brenan, Brenan, & Greenwood in Brenan 14465* (W--2892124).

PRIVA AURICOCCEA Meeuse

Additional bibliography: Mold., *Phytologia* 43: 334. 1979; Mold., *Phytol. Mem.* 2: 243 & 572. 1980.

PRIVA BAHIENSIS P. DC.

Additional bibliography: C. Muell. in Walp., *Ann. Bot. Syst.* 5: 706. 1860; Mold., *Phytologia* 43: 420--421. 1979; Mold., *Phytol. Mem.* 2: 161, 178, & 572. 1980; Mold. & Bromley in Harley & Mayo, *Toward Checklist Fl. Bahia* 192. 1980; Mold., *Phytologia* 47: 461. 1981.

Recent collectors describe this plant as a tall herb, to cm. in height, with green fruit, and have encountered it at 50 m. altitude, fruiting in March, recording the vernacular name, "pega-pinto".

Additional citations: BRAZIL: Bahia: *Hage 234* (Ld).

PRIVA BOLIVIANA Mold.

Additional bibliography: Mold., *Phytologia* 43: 421. 1979; Mold., *Phytol. Mem.* 2: 175, 178, 190, & 572. 1980.

PRIVA CORDIFOLIA (L. f.) Druce

Additional & emended bibliography: Roxb., Hort. Beng., imp. 1, 46. 1814; Loud., Hort. Brit., ed. 1, 246 (1830) and ed. 2, 246. 1832; Roxb., Fl. Ind., ed. 2, imp. 1, 3: 90--91. 1832; G. Don in Sweet, Hort. Brit., ed. 3, 552. 1839; C. Muell. in Walp., Ann. Bot. Syst. 5: 706. 1860; Roxb., Fl. Ind., ed. 2, imp. 2, 488. 1874; Balf. f., Trans. Roy. Soc. Edinb. 31: [Bot. Socotra] 232--233. 1888; Vierh., K. Akad. Wiss. Wien Denkschr. 71: 114--115 [434--435]. 1907; Marloth, Fl. S. Afr. 3: 146. 1932; Roxb., Fl. Ind., ed. 2, imp. 3, 488. 1971; Holm, Pancho, Herberger, & Plucknett, Geogr. Atlas World Weeds 296. 1979; Mold., Phytologia 43: 421--426 (1979) and 44: 92, 108, & 109. 1979; Mold., Phytol. Mem. 2: 204, 256, 257, 265, 269, 271, 273, 275, 359, 434, & 572. 1980; Roxb., Hort. Beng., imp. 2, 46. 1980.

PRIVA CORDIFOLIA var. *ABYSSINICA* (Jaub. & Spach) Mold.

Additional & emended bibliography: C. Muell. in Walp., Ann. Bot. Syst. 5: 705. 1860; Balf. f., Trans. Roy. Soc. Edinb. 31: [Bot. Socotra] 232--233 & 433. 1888; Vierh., K. Akad. Wiss. Wien Denkschr. 71: 114--115 [434--435]. 1907; Mold., Phytologia 43: 424--426. 1979; Mold., Phytol. Mem. 2: 199, 201--204, 224, 227, 231, 238, 239, 241, 246, 251, 253, 434, & 572--573. 1980.

Kazmi refers to this plant as a "shrub", 1 m. tall, and his material has been misidentified and distributed in some herbaria as *P. curtisiae* Kobuski.

Additional citations: SOMALIA: Kazmi 341 (Mu).

PRIVA CORDIFOLIA var. *AUSTRALIS* Mold.

Additional bibliography: Mold., Phytologia 43: 424 & 426 (1979) and 44: 109. 1979; Mold., Phytol. Mem. 2: 241, 246, & 573. 1980.

Dahlstrand found this plant growing on sandstone, at 900 m. altitude, in fruit in May. His material has been misidentified and distributed in some herbaria as *P. meyeri* Jaub. & Spach.

Additional citations: SOUTH AFRICA: Transvaal: Dahlstrand 1638 (Go).

PRIVA CORDIFOLIA var. *FLABELLIFORMIS* Mold.

Additional bibliography: Mold., Phytologia 44: 92 & 109. 1979; Mold., Phytol. Mem. 2: 221, 224, 227, 236, 238, 239, 241, & 573. 1980.

PRIVA CURTISIAE Kobuski

Additional bibliography: H. N. & A. L. Mold., Pl. Life 2: 55. 1948; Mold., Phytologia 44: 92--93. 1979; Mold., Phytol. Mem. 2: 227, 231, & 573. 1980.

The Kazmi 341, distributed as *P. curtisiae*, actually is *P. cordifolia* var. *abyssinica* (Jaub. & Spach) Mold.

PRIVA DOMINGENSIS Urb., Symb. Antill. 7: 354. 1912.

Additional & emended bibliography: Urb., Symb. Antill. 7: 354. 1912; Mold., Phytologia 44: 93. 1979; Mold., Phytol. Mem. 2: 96 & 573. 1980.